

### ***In the Claims***

Claims 1-43 (Canceled)

Claim 44 (New): A machine readable storage medium comprising a program containing a set of instructions for causing a cell screening system to execute procedures for detecting the translocation of a cellular component of interest between a first cellular compartment and a second cellular compartment on or within individual cells on an array of locations which contain multiple cells, wherein the procedures comprise:

- a) defining a first cellular compartment mask and a second cellular compartment mask in multiple individual cells on the array of locations from luminescent signals obtained from a plurality of luminescent reporter molecules on or in the individual cells, wherein the plurality of luminescent reporter molecules comprises at least a first luminescent reporter molecule to identify the individual cells, and at least a second luminescent reporter molecule to report on a cellular component of interest, wherein luminescent signals from the at least first and the at least second luminescent reporter molecules are optically distinguishable;
  - b) determining an intensity of the luminescent signals from the at least second luminescent reporter molecule in the first cellular compartment mask and the second cellular compartment mask; and
  - c) determining one or both of the following:
    - i) a ratio of the intensity of the luminescent signals from the at least second luminescent reporter molecule in the first cellular compartment mask and the second cellular compartment mask; and
    - ii) a difference of the intensity of the luminescent signals from the at least second luminescent reporter molecule in the first cellular compartment mask and the second cellular compartment mask;
- wherein the ratio of the intensity of the luminescent signals from the at least second luminescent reporter molecule in the first cellular compartment mask and the second cellular compartment mask and/or the difference of the intensity of the luminescent signals from the at least second luminescent reporter molecule in the first cellular compartment mask and the second cellular compartment mask provides a measure of the translocation of the cellular component of interest between the first cellular compartment and the second cellular compartment on or within the individual cells.

Claim 45 (New): The machine readable storage medium of claim 44, wherein the procedures further comprise storing an image of each individual cell.

Claim 46 (New): The machine readable storage medium of claim 44, wherein the procedures further comprise storing data obtained in a database.

Claim 47 (New): The machine readable storage medium of claim 46, wherein the data stored in the database can be reviewed for individual cells.

Claim 48 (New): The machine readable storage medium of claim 46, wherein the data stored in the database can be reviewed for individual locations containing cells.

Claim 49 (New): The machine readable storage medium of claim 44, wherein the procedures further comprise generating summary data.

Claim 50 (New): The machine readable storage medium of claim 44, wherein the first cellular compartment and the second cellular compartment consist of a cell nucleus and a cell cytoplasm, and wherein the translocation comprises a translocation between the cell cytoplasm and the cell nucleus.

Claim 51 (New): The machine readable storage medium of claim 44, wherein the first cellular compartment and the second cellular compartment consist of a cell nucleus and a cell cytoplasm, and wherein the translocation comprises a translocation between the cell cytoplasm and the cell nucleus.

Claim 52 (New): The machine readable storage medium of claim 44, wherein the first cellular compartment and the second cellular compartment consist of a cell cytoplasm and a cell membrane, and wherein the translocation comprises a translocation between the cell cytoplasm and the cell membrane.

Claim 53 (New): The machine readable storage medium of claim 44 wherein the first and second luminescent reporter molecules comprise fluorescent reporter molecules.

Claim 54 (New): The machine readable storage medium of claim 44 wherein the cellular component of interest is a protein.

Claim 55 (New): The machine readable storage medium of claim 44 wherein the procedures are used to test an effect of a test compound on translocation of the cellular component of interest between the first cellular compartment and the second cellular compartment on or within the individual cells.

Claim 56 (New): The machine readable storage medium of claim 55, wherein the individual cells are live cells, and wherein steps (a) through (c) are performed at multiple time points.

**Support for the new claims:**

The new claims are supported throughout the application, for example on page 33 line 23 to page 34 line 25; page 36 lines 3-21; Example 1 on pages 46-49; page 55 line 16 to page 58 line 22; page 62 line 14 to page 64 line 9; page 68 line 15 to page 72 line 11; and Figures 13 and 14. Thus, the new claims do not constitute new matter.

Respectfully submitted,

10/15/03

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